

ABSTRACT

In accordance with the present invention a method of and a system for enhancing image quality of a coded digital video signal representative of at least one frame in a digital video system are provided. The method comprises the steps of creating a usefulness metric identifying a limit to sharpness enhancement to be applied to the coded digital video signal, defining local spatial features in the frame, and identifying a frame type for the frame. The usefulness metric created in the creating step is:

$$UME = 1 - M * \left(1 + \frac{q\_scale}{N}\right)^2 * \frac{\frac{q\_scale}{num\_bits}}{\max\left(\frac{q\_scale}{num\_bits}\right)}$$

wherein  $UME$  is the usefulness metric,  $q\_scale$  is a quantization scale for a macroblock,  $num\_bits$  is a number of bits to encode a luminance block,  $\max$  is a function representing a maximum value for the frame, and  $M$  and  $N$  are scaling factors. The method further includes the steps of calculating a coding gain of each pixel in the frame based on the local spatial features and the usefulness metric in accordance with the frame type. Finally, the method also includes the steps of applying the coding gain to at least one sharpness enhancement algorithm, and generating an enhanced digital video signal by application of the sharpness enhancement algorithm.